Application Number: T3-00005 **Scientific Score**: 70

Specific names of individuals and institutions are blacked out to preserve applicant confidentiality where possible.

Title: Integrative Training in Stem Cell Biology at [redacted]

Proposal Abstract as Submitted by Applicant

Our overall objective is to train pre and postdoctoral scientists to become productive members of the stem cell biology work force. [redacted] is a major research institution with the faculty, staff, and infrastructure needed to provide excellent training for students engaged in stem cell research. This Level III application proposes to train a total of 18 individuals at the pre-doctoral and post-doctoral levels over the 3-year grant period. Training will be done through two core courses - one in Stem Cell Biology and the other in Bioethics and Social Implications of Stem Cell Biology, both of which are being established as part of this program. Textbooks will also be developed from these courses to create much needed educational materials in this rapidly expanding field. In addition, training will be provided through seminars, weekly stem cell group lab meetings, and an annual workshop sponsored in collaboration with the [redacted]. Trainees will have an opportunity to participate in monthly stem cell lab meetings at the [redacted], as well as in local and national stem cell meetings. Our faculty participants come from 12 different graduate programs in four colleges and form a highly integrated interdisciplinary group of active researchers whose labs are all supported by extramural funding. [redacted] has an excellent record of training pre and postdoctoral scientists and is renowned for its collegial atmosphere and interactive work environment. Training will be interdisciplinary with cross training in the life sciences, biomedical sciences, engineering, and humanities. All of our mentors have well established records of working collaboratively, and many have won awards for outstanding mentoring. [redacted] is a designated Minority Institution, and we have an excellent record of recruiting, retaining, and training minority students at the both the graduate and undergraduate levels. We are located in one of the fastest growing areas in the country, and student enrollment has grown 61% in the past six years. Our faculty network with colleagues at academic, industrial and research centers where stem cell biology research is being conducted. [redacted] will match CIRM funding with $30,000 to support faculty travel to stem cell meetings and participation in stem cell training courses.

Benefit of this Program to California

This program will benefit the people and the state of California by providing high-quality training in the scientific, clinical, social, and ethical aspects of stem-cell research to the scientists and clinicians who will develop and apply future therapies in this rapidly emerging field.

Summary of Review

This type III application proposes the development of a training program for predoctoral and postdoctoral fellows in stem-cell biology. A unique aspect of this program is that the institution will develop a stem-cell course textbook, and it has the expertise to do so. The

quality of the training program and the integration of its components are excellent, seeking to bring together faculty from 12 different graduate programs into an interdisciplinary program. The well-organized coursework includes training in stem-cell biology and ethics/social implications of stem-cell research. Trainees will participate in an annual stem-cell workshop and research in a mentor's lab. The laboratory research training is perhaps under-developed and the program offers little emphasis on disease. The program director is exceptionally qualified having extensive training experience, which is directly relevant to this application. The director was the founding director of an interdepartmental graduate program and is clearly an ideal person for this job. The proposal did not identify members of the executive committee. The caliber of the training faculty is good; however, the number of faculty with direct stem-cell experience is low. The size and quality of the existing training programs will provide an excellent applicant pool for appointment of trainees. This institution does not currently have great strength in stem-cell research but has put together an extremely well thought out proposal with regard to training. One concern is that the post-doctoral fellows will not be in labs directly working with stem cells. There is some indication, however, that the institution will recruit additional faculty.

Overall Strengths and Weaknesses

The quality of the proposed program is high with well-organized coursework and an exceptional program leader with over 20 years of experience in training. The program has a unique aspect: the development of stem cell course textbook. The faculty has limited background in stem cells but expect to develop this in the near future. The development of biological and translational expertise might be a challenge given the lack of a clinical component.

Recommendations

Highly meritorious and recommended for funding.

	Pre	Post	Clinical	Total
Fellows Requested:	3	3	0	6
Fellows Recommended:	3	3	0	6

	Year 1	Total
Budget Requested:	$ 345,070	$ 1,067,340
Budget Recommended:	$ 345,070	$ 1,067,340